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### I. INTRODUCTION

On May 7, 1999, Tennessee Gas Pipeline Company ("Tennessee" or "Company") filed a petition pursuant to G.L. c. 40A, § 3 with the Department of Telecommunications and Energy ("Department") for an exemption from the zoning bylaws of the Town of Mendon ("Mendon") in order to expand its compressor station and other natural gas pipeline facilities on its properties with frontage on Thayer Road, Mendon, Massachusetts ("proposed compressor station expansion") and in order to upgrade its interconnect facilities on an access road off of Bates Street, Mendon, Massachusetts ("proposed pressure regulation facility") (Exh. TM-1, at 1-2). (1) The Department docketed the petition as D.T.E. 99-50.

The Company stated that the proposed compressor station expansion would involve the installation of a 7,170 ISO HP Solar Taurus natural gas compressor enclosed within a 68' by 75' by 24' high building with a forty-eight foot stack and the construction of two 32' by 20' by 17.6' high extensions to the existing control building to house electronic controls, and other associated piping and ancillary equipment (Exhs. TM-1A at 4; HO-G-4S; TM-1B; HO-A-2). The Company explained that the proposed 22.4 acre site currently contains an existing compressor station with stack, control building, and associated equipment (Exh. TM-1B; RR-DTE-5).

The Company stated that the proposed pressure regulation facility would consist of one 9' by 12' by 10' high building that would house control equipment and associated piping and ancillary equipment (Exh. HO-G-4S). Tennessee has proposed to construct the proposed pressure regulation facility on property where the Company owns and operates facilities that interconnect to the Algonquin Gas Transmission Company ("Algonquin") (Exh. TM-1E; RR-DTE-6 (Att.); Tr. 1, at 13). The Company is requesting, pursuant to G.L. c. 40A, § 3, exemption from any and all provisions of the Zoning By-Laws of Mendon ("Mendon bylaws") which may be applicable to the Petitioner's proposed project (Exh. TM-2, at 4). Tennessee asserts that aspects of both proposed projects would not conform to the Mendon bylaws, because the properties are located in residential zones (id.).

Tennessee maintains that it is a natural gas pipeline company as defined by Chapter 164 of the Massachusetts General Laws and is a public utility transporting natural gas in bulk to numerous Massachusetts and other New England local distribution companies (<u>id.</u> at 1).

#### II. PROCEDURAL HISTORY

Pursuant to notice duly issued, the Department held a public hearing on the Company's petition in Mendon on July 6, 1999, to afford interested persons an opportunity to be heard. Tennessee presented a summary of its petition (Pub. Hearing 7/6/99, Tr. 1, at 7-12). Area residents raised concerns regarding noise, traffic, and air emissions (<u>id.</u>, at 23-24, 26, 33-36).

Petitions for leave to intervene were filed by Jeffrey Giacomelli and Tracey A. Smith ("Giacomelli/Smith") and the Mendon Zoning Board of Appeals ("ZBA"). The Hearing Officer granted both petitions.

The Department held evidentiary hearings on November 16, 1999 and November 17, 1999. In support of its petition, the Company sponsored the testimony of Buford Barr, the principal engineer for Tennessee.

The Department received briefs from Tennessee on December 3, 1999 and from Don Keller, as the spokesperson for the ZBA, on December 8, 1999.

#### III. STANDARD OF REVIEW

G.L. c. 40A, § 3 provides, in relevant part, that

Land or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or bylaw if, upon petition of the corporation, the [Department] shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public . . . .

Thus, a petitioner seeking exemption from a local zoning bylaw under G.L. c. 40A, § 3 must first qualify as a public service corporation. Save the Bay, Inc. v. Department of Public Utilities, 366 Mass. 667 (1975) ("Save the Bay"). The petitioner then must establish that it requires a zoning exemption, and that its present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare. New England Power Company, EFSB 97-3 (1998) ("1998 NEPCo Decision"), at 73.

In determining whether a petitioner qualifies as a "public service corporation" for the purposes of G.L. c. 40A, § 3, the Supreme Judicial Court has stated:

among the pertinent considerations are whether the corporation is organized pursuant to an appropriate franchise from the State to provide for a necessity or convenience to the general public which could not be furnished through the ordinary channels of private business; whether the corporation is subject to the requisite degree of governmental control and regulation; and the nature of the public benefit to be derived from the service provided.

Save the Bay, 366 Mass. 667, 680. See also, Berkshire Power Development, Inc. D.P.U. 96-104 (1997) ("Berkshire Zoning Decision"), at 26-36.

In determining whether the present or proposed use is reasonably necessary for the public convenience or welfare, the Department must balance the interests of the general public against the local interest. Save the Bay, 366 Mass. 667, at 680; Town of Truro v.

Department of Public Utilities, 365 Mass. 407 (1974); 1998 NEPCo Decision, EFSB 97-3, at 73; Berkshire Zoning Decision, D.P.U. 96-104, at 18. Specifically, the Department is empowered and required to undertake "a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [make an] examination of the local and individual interests which might be affected." New York Central Railroad v. Department of Public Utilities, 347 Mass. 586 (1964), at 592 ("New York Central Railroad"); 1998 NEPCo Decision, EFSB 97-3, at 73. When reviewing a petition for a zoning exemption under G.L. c. 40A, § 3, the Department is empowered and required to consider the public effects of the requested exemption in the State as a whole and upon the territory served by the petitioner. Save the Bay, 366 Mass. 667, at 685; New York Central Railroad, 347 Mass. 586, at 592; 1998 NEPCo Decision, EFSB 97-3, at 74.

With respect to the particular site chosen by a petitioner, G.L. c. 40A, § 3 does not require a demonstration that the petitioner's preferred site is the best possible alternative, nor does the statute require the Department to consider and reject every possible alternative site presented. Martarano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, at 591; 1998 NEPCo Decision, EFSB 97-1, at 74. Rather, the availability of alternative sites, the efforts necessary to secure them, and the relative advantages and disadvantages of those sites are matters of fact bearing solely upon the main issue of whether the preferred site is reasonably necessary for the convenience or welfare of the public.

Therefore, when making a determination as to whether a petitioner's present or proposed use is reasonably necessary for the public convenience or welfare, the Department examines: (1) the present or proposed use and any alternatives or alternative sites identified. See 1998 NEPCo Decision, EFSB 97-3, at 74; Massachusetts Electric Company, D.P.U.

93-29/30 (1995) ("1995 MECo Decision"), at 10-14, 22-23; New England Power Company, D.P.U. 92-278/279/280 (1994) ("1994 NEPCo Decision"), at 10-14, 22-23; Tennessee Gas Pipeline Company, D.P.U. 85-207 (1986) ("1986 Tennessee Decision"), at 18-20; (2) the need for, or public benefits of, the present or proposed use. See 1998

NEPCo Decision, EFSB 97-3, at 74; 1995 MECo Decision, D.P.U. 93-29/30, at 10-14; 1994 NEPCo Decision, D.P.U. 92-278/279/280, at 20-23; 1986 Tennessee Decision, D.P.U. 85-207, at 20-25); and (3) the environmental impacts or any other impacts of the present or proposed use. See 1998 NEPCo Decision, EFSB 97-3, at 74; 1995 MECo Decision, D.P.U. 93-29/30, at 14-21; 1986 Tennessee Decision, D.P.U. 85-207, at 20-25. The Department then balances the interests of the general public against the local interest, and determines whether the present or proposed use of the land or structures is reasonably necessary for the convenience or welfare of the public. (5)

#### IV. ANALYSIS AND FINDINGS

#### A. Public Service Corporation Status

Tennessee is a "natural gas pipeline company" as defined by G.L. c. 164, and is a public utility transporting natural gas in bulk to numerous Massachusetts and other New England customers (Exh. TM-1, at 1). See also Tennessee Gas Pipeline Company, D.T.E. 98-33 (1998), D.P.U. 91-247 (1992), D.P.U. 91-54 (1991). Accordingly, the Department finds that Tennessee qualifies as a public service corporation for the purposes of G.L. c. 40, § 3.

# B. Need for the Requested Exemption

The Company stated that both the proposed compressor station expansion and the pressure regulation facility would be located in residential zones in Mendon (Exhs. TM-1, at 2, 4; TM-1D; RR-4 (12/6/99)). The Company stated that it is seeking a blanket exemption for both proposed projects from any and all provisions of the Mendon bylaws which are, or may be, applicable to its projects (Exhs. TM-1, at 2, 4; HO-LU-1S).

The Company explained that the proposed uses are prohibited in a residential zone (Exhs. TM-1D, at 5-6; HO-LU-1S). Tennessee further indicated that it believes Sections 1 through 3 of the Mendon bylaws are applicable to both proposed projects (id.). The Company noted that (1) Section 1 defines the residential and non-residential areas in Mendon; (2) Section 2 outlines permitted and prohibited uses in a residential zone; and (3) Section 3 lists prohibited uses that apply to the whole town (Exhs. HO-LU-1S; TM-1D at 9, Tr. 1, at 58-60). The Company's witness Mr. Barr also testified that other sections of the Mendon bylaws could be applicable to both proposed projects, including Section 4, which concerns the expansion of non-conforming uses, Sections 5, which relates to lot requirements and approval from the Building Commissioner, and Section 8, which also pertains to Building Commissioner approval (Tr. 1, at 58-67).

The record demonstrates that in order to construct the proposed compressor station expansion facility and the proposed pressure regulation facility at the proposed sites, the Company would require exemptions from Sections 1 (delineation of uses), Section 2

(allowed uses), and Section 4 (expansion of non-conforming uses of the Mendon bylaws). Further, the record indicates that in order to construct and operate both proposed projects, Tennessee may be required to obtain exemptions from Section 3 (because the prohibition on electrical generation could be read to extend to the turbines used to generate power to compress gas), and Sections 5 and 8 (which have provisions requiring the Building Commissioner to find that a facility conforms with the zoning code in order to issue a building permit). Accordingly, the Department finds that Tennessee has established that it requires an exemption from certain sections of the Mendon bylaws in order to construct and operate both proposed projects at the proposed sites.

#### C. Public Convenience or Welfare

#### 1. Need or Public Benefit of Use

Tennessee stated that both proposed projects are a part of its Eastern Express Project 2000 ("EE Project 2000"), which would upgrade and add facilities along Tennessee's pipelines in Massachusetts and Connecticut to serve new customers (Exh. TM-1A at 1-1, 1-4 to 1-5). The Company asserted that the proposed projects would enable the Company to maintain its current level of service to its customers and to increase its capacity to transport natural gas to new merchant power plants in the region and to Algonquin, which interconnects with Tennessee's pipeline near the proposed pressure regulation facility site (Exh. TM-1, at 2, 4; Tr. 1, at 15-16). The Company stated that the proposed compressor station expansion would increase capacity on Tennessee's Blackstone Lateral by 292,000 dekatherms per day ("Dth/d") (Exh. TM-1A at 5). (8) The Company explained that the proposed pressure regulation facility is needed to reduce the additional pressure created by the proposed compressor station expansion for downstream customers other than Algonquin, since these customers cannot handle a higher pressure (Tr. 1, at 15, 16). Further, the Company stated that it received a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission ("FERC") on October 29, 1999 for its EE Project 2000 (RR-DTE-17 (Att.)).

#### 2. Alternatives Explored

The Company stated that it considered alternatives to the EE Project 2000, including service through the Portland Natural Gas Transmission System, no action, and energy conservation, and determined that none of these alternatives would meet the increasing demand for natural gas (Exh. TM-1AE at 10-1 to 10-2). The Company stated that it considered constructing eight miles of additional pipeline as an alternative to the proposed compressor station expansion; however, it concluded that the pipeline alternative would result in both higher costs and greater environmental impacts, due to the need to acquire a new permanent right of way (<u>id.</u> at 10-3).

The Company stated that it did not evaluate any other sites for the proposed projects because the use of existing sites minimizes costs and environmental impacts (Exh. TM-1AE at 10-3; Tr. 2, at 100). Tennessee testified that it generally prefers to add

compression at existing compressor stations, but may, if needed, add compression to the system from a new site (Tr. 2, at 100).

## 3. Impacts of the Proposed Use

#### a. Water Resources

The Company stated that the only water used at the existing compressor station is for domestic purposes, and that the proposed compressor station expansion would not change the water use of the facility (Exh. HO-W-1). The Company added that the existing compressor station has only a minimal discharge of sanitary sewage into a septic field, and that the proposed compressor station expansion would not alter the discharge of sanitary or process water (Exh. HO-W-2). The Company indicated that there is no current or proposed water use or discharge at the proposed pressure regulation facility site (Exhs. HO-W-1; HO-W-2).

Tennessee stated that neither the proposed compressor station expansion nor the pressure regulation facility would affect public water supplies, because both proposed projects are not near any federal or state designated wellhead protection areas, sole source aquifers, or outstanding resource waters (Exhs. TM-1AE at 2-7 to 2-8; HO-W-4). The Company indicated that, at both proposed project sites, it would test the integrity of the pipeline sections using hydrostatic water to test the integrity of the pipeline sections, which would be delivered by truck and discharged to an appropriate water body on site (Exh. TM-1AE at 2-5 to 2-7). The Company stated that the discharged water would not contain any contaminants and that a discharge permit from the United States Environmental Protection Agency would be required for the discharge (Exhs. TM-1AE, Table 1.6-1; HO-W-6).

#### b. Wetlands

Tennessee stated that its proposed compressor station expansion facility would not require the alteration of any wetlands or work within any wetland buffer zone (Exhs. HO-WL-1; TM-1AE at 3-9; TM-1B). The Company testified that the existing stormwater on the compressor station site either sheet flows over the site to the north and west, infiltrating into the soil, or flows to a swale along the driveway and into a gravel infiltration area (Exh. HO-W-8; Tr. 1, at 40-43). The Company indicated that the proposed compressor station expansion would increase the impervious surface on the site by 9,000 square feet, but that it currently does not have, and does not expect to have in the future, any problems with stormwater (Exh. HO-W-8; Tr. 1, at 43).

The Company stated that the proposed pressure regulation facility would be located within a wetland buffer zone, approximately 40 feet away from a bordering vegetated wetland (Exh. HO-WL-3S-R). In its Notice of Intent to the Mendon Conservation Commission, the Company stated that no wetlands would be altered for the construction of the proposed pressure regulation facility, and that the Company would employ methods to reduce erosion, siltation, and other problems that could damage the wetlands

during construction (RR-DTE-1 (Att.)). The Mendon Conservation Commission approved the proposed pressure regulation facility on November 9, 1999 (id. (12/6/99)).

The Company indicated that the site of proposed pressure regulation facility currently has only minimal amounts of impervious surface associated with existing structures (Exh. HO-W-9). The Company stated that the proposed building would increase the impervious surface on the site by only a small amount, and therefore would have an insignificant impact on stormwater discharges (<u>id.</u>).

Tennessee submitted an environmental construction plan for both proposed projects detailing the means which the Company would use during construction in order to minimize erosion and sedimentation (Exh. TM-1AE (App. B)).

### c. Air

The Company stated that the existing compressor station is subject to federal and state air quality regulations as a result of its emissions of pollutants regulated under the Clean Air Act, including: nitrous oxides ("NO<sub>X</sub>"), carbon monoxide ("CO"), volatile organic compounds ("VOCs"), particulates under ten microns ("PM-10"), and sulfur dioxides ("SO<sub>2</sub>") (Exhs. HO-A-2; TM-1AE at 9-1). The Company estimated that, assuming full-load operation of the facility for 365 days per year, the proposed compressor station expansion would increase emissions of pollutants at the proposed site by 65 percent for NO<sub>X</sub>, 83 percent for CO, 173 percent for VOCs, 227 percent for PM-10, and 2 percent for SO<sub>2</sub> (Exh. HO-A-1S (Att.), Tables 3-1, 3-2). The Company noted that the proposed addition to the compressor station would make the facility, as a whole, a major source of air emissions (RR-DTE-13). (13)

The Company stated that it would be required to meet the Best Available Control Technology ("BACT") for all emitted pollutants (Exh. HO-A-2). Tennessee has proposed to use dry low NO<sub>X</sub> combustion technology to meet BACT for NO<sub>X</sub> and minimize CO through turbine combustion controls (Exh. HO-A-1S (Att.) at 3-2). The Company asserted that the exclusive use of natural gas would minimize PM-10, SO<sub>2</sub>, and other pollutants (<u>id.</u>).

The Company indicated that the proposed pressure regulation facility would not have any air emissions (Exh. TM-1AE at 9-1 to 9-2).

#### d. Noise

The Company indicated that the operation of the proposed compressor station expansion would increase noise levels over those currently existing on the site (Exh. TM-2, at 9-9). The Company stated that it conducted measurements of noise from the existing facility on December 10, 1992 and July 2, 1999 (Exh. GS-1). The Company stated that at the nearest residence, 399 feet to the southeast of the proposed facility, the  $L_{90}^{(14)}$  noise level with the existing compressors running was 47.5 dBA in July of 1999 (Exhs. TM-2, at 9-7 to 9-9; HO-N-3). The record also showed that noise monitoring data from December of

1992 indicated that ambient noise levels, at that time, with the existing compressors running resulted in an equivalent sound level (" $L_{eq}$ ")<sup>(15)</sup> of 39.8 dBA (Exh. TM-1AE at 9-7 to 9-9). (16)

At the nearest residence, the Company estimated that the new compressors would produce noise levels of  $L_{eq}$  46.7 dBA and a day-night sound level (" $L_{dn}$ ")<sup>(17)</sup> of 53.1 dBA (Exh. TM-2, at 9-9). In order to comply with an order from FERC, the Company has committed to additional noise mitigation on the existing compressor station, resulting in an estimated total compressor station noise at the nearest residence of 48.0 dBA ( $L_{90}$ ) and 54.4 dBA ( $L_{dn}$ ) (RR-DTE-19; RR-DTE-22). The Company indicated that no noise would result form the operation of the proposed pressure regulation facility (Exh. TM-1AE at 9-4).

The Company stated that construction of both proposed projects would take place from sun-up to sundown, six days a week (Exhs. HO-N-10; HO-N-11; Tr. 1, at 35-36). When questioned on its ability to limit the hours and days of construction, the Company testified that it would need to work 24 hours a day, or more than 6 days a week, during the start-up and commissioning phase of construction and asserted that work would be completed more quickly if it were able to work extended hours (Tr. 1, at 35-36).

#### e. Land Use

The Company estimated that the proposed compressor station expansion would permanently alter .83 acres of land and have an impact on .9 acres of forested land during construction (Exh. TM-1AE Tables 8.1-1 to 8.1-3). The Company stated that the proposed compressor station site is residentially zoned and is surrounded by residential zoning (Exh. HO-LU-4; RR-DTE-4 (12/6/99)). Tennessee stated that the site has been used for the existing compressor station since 1992 (Exh. HO-LU-3). Land surrounding the proposed compressor station site is primarily open or forested, with a gas pipeline easement and a small number of residential properties (Exhs. HO-LU-4 (12/6/99); TM-3A). A single residence abuts the site, and some additional residences are located approximately one-fifth of a mile or more down Thayer Road (RR-DTE-6 (Att.)). Tennessee indicated that land use in the area around both proposed projects has not changed since the installation of the original facilities (Exhs. TM-3A; TM-3B; RR-DTE-6; RR-DTE-7 (12/6/99); Tr. 1, at 31-32).

The Company submitted documentation showing that the United States Fish and Wildlife Service and the Massachusetts Natural Heritage and Endangered Species Program have concluded that neither of the proposed projects would affect any federal or state listed or designated critical habitats or species (Exhs. TM-1AE (App. A); HO-LU-8).

The Company noted that the compressor station site is located on a potential archaeological site and that the Massachusetts Historical Commission ("MHC") had established a buffer zone around the archaeological area when the original compressor station was permitted (Exh. TM-1AE at 4-1 to 4-4, (App. A)). The Company stated that the proposed compressor station expansion would not intrude into the buffer zone and

indicated that MHC had determined that the proposed project would not have an impact on archeological resources as long as work was not done inside the buffer zone (Exhs. HO-LU-11; TM-1AE at 4-1 to 4-4, (App. A)).

#### f. Visual

The Company is proposing to build a 24-foot high building with a 48-foot high exhaust stack at the proposed compressor station site (Exhs. HO-G-4-S; HO-A-2). The Company presented photographs of the existing facility that show significant buffers of trees in the north, west and east (Exh. TM-3A). The Company submitted photographs of the existing compressor stations from the nearest residence to the southeast of the proposed facility, which show a smaller buffer of evergreen and deciduous trees that screen the view of the existing facility (Exhs. HO-V-1S-R (Atts.); TM-3A).

The Company indicated that the proposed pressure regulation facility would be ten feet tall, and that there are no residences in the vicinity of the proposed site (Exhs. HO-G-4; TM-3B). Tennessee also contacted various federal and state agencies, who responded that both proposed sites were not near any federal or state recreational or scenic areas or natural landmarks (Exhs. TM-1AE (App. A); TM-1A (Att. F-II)).

#### g. Other

Concerning traffic impacts, the Company stated that the compressor station project would take five to six months to complete and would require 30 to 50 construction workers (Exhs. TM-1AE at 1-7; HO-G-7). The Company stated the proposed pressure regulation facility would take two to three months to complete and would require 5 to 20 construction workers (Exhs. TM-1AE at 1-7; HO-G-7). The Company explained that no additional personnel would be needed to operate the proposed compressor station expansion or proposed pressure regulation facility (Exhs. HO-LU-9; HO-LU-10).

Tennessee stated that it currently uses and stores chemicals, such as ethylene, glycol, gasoline, and petroleum oils, at the compressor station site, but does not store any chemicals at the proposed pressure regulation facility site (Exh. HO-W-7). The Company stated that the existing compressor station is considered a "Very Small Quantity Generator" of hazardous waste (Exh. Men-18). Tennessee testified that the compressor station site had been investigated and remediated for mercury contamination, but that the Company is unaware of any spill or accident at either site (Exh. HO-W-7; Tr. 1, at 45-46).

Tennessee asserted that it has one of the most effective safety programs in the natural gas pipeline industry and that, in general, natural gas pipelines have low accidents rates (Exh. TM-1AE at 11-1 to 11-8). The Company stated that both proposed projects would be constructed in accordance with the United States Department of Transportation's Minimum Federal Safety Standards and Occupational Safety and Health Administration standards (<u>id.</u> at 11-1 to 11-2; Exh. HO-S-1). The Company asserted that the existing fencing at the compressor station site would reduce the risk of trespassers (Exh. HO-S-2).

### 4. Analysis

Tennessee has shown that the proposed compressor station expansion is needed to provide additional volumes of natural gas to new power plants and other customers in the area, and that the proposed pressure regulation facility is needed so that existing customers are not provided with gas at pressure levels they cannot handle. The record indicates that both proposed projects are part of the Company's EE Project 2000 and that FERC has issued a Certificate of Public Convenience and Necessity for the EE Project 2000. Consequently, the Department finds that the construction of the proposed projects would be in the public interest because it would enable Tennessee to serve new natural gas customers in Massachusetts, while maintaining reliable and safe delivery to existing customers. (18)

The record shows that the Company considered alternatives projects to the EE Project 2000, including conservation, a pipeline alternative, and no action, but that project alternatives either would not meet the need for additional gas supplies or would have higher costs and greater environmental impacts. The record indicates that the Company proposed to site the facilities on properties where it has existing similar equipment in order to minimize land-use impacts.

The record shows that the proposed compressor station would be located on a residentially zoned property which is the site of an existing compressor station. The existing compressor station would remain in place. A single residence abuts the site, and some additional residences are located one fifth of a mile or more down Thayer Road. Therefore, an expansion of the compressor station would not significantly change existing land uses in the area. The record shows that the construction and operation of the proposed compressor station would result in a variety of environmental impacts, the chief of which is noise. The Department notes that local residents have raised concerns about the combined noise from the proposed and the existing compressor stations. The Department also notes that in response to a FERC Order the Company agreed to take steps to reduce the noise from the existing compressor station and to minimize noise from the proposed facility. The Company indicated that the ambient L<sub>90</sub> noise level is 47.5 dBA at the nearest residence with the existing compressor station running; however, these results seem inconsistent with 1992 ambient levels of 39.8 dBA  $\underline{L}_{eq}$ , the monitoring data sheets submitted, and the Company's assertion that the area around the compressor station has not changed significantly since the compressor station was installed. (19) In addition, the monitoring data submitted by the Company does not include noise measurements actually taken at the nearest residence or noise levels at 47.5 dBA.

Using the higher 1999 ambient measurements, the Company estimated that at the nearest residence, and with mitigation installed at the existing compressor station, the combined noise of the existing and proposed compressors would result in an  $L_{dn}$  of 54.4 dBA and a minimal increase in  $L_{90}$  of .5 dBA over the 1999 measurements with the existing compressor station running. However, because the record does not include a measurement of the ambient noise without the existing compressor station running, the Department cannot determine the total noise increase likely to result from the combined

operation of the existing and proposed facilities. The Department notes that the Company's estimate of noise levels with both compressors running and using 1999 measurements is very close to the EPA's  $55\,L_{dn}$  guideline, which is intended to protect public health and welfare in residential locations. In addition, the Department notes that as a condition of the original compressor station facility, it required on-going noise measurements, which apparently were not taken. The Department is concerned about the Company's apparent failure to meet those conditions, because we do not approve exemptions under c.  $40\,$ § 3 lightly.

Therefore, to provide Mendon and affected residents with an understanding of the combined noise impacts of the existing and proposed compressor stations, the Department requires Tennessee to conduct measurements to establish a "baseline" ambient noise level and to provide periodic monitoring of future noise levels at the southeast property line and at the nearest residence under summer and winter conditions. To establish baseline ambient noise levels, the Company shall either (1) monitor noise levels without either the existing or the proposed compressor station in operation, or (2) monitor noise levels at locations similar to the southeast property line and the nearest residence, but not affected by the noise of the existing compressor station. The Company also shall monitor noise levels with both compressor stations in full operation during peak load conditions in summer and winter, for the first, third, fifth, and tenth year after the completion of the proposed compressor station expansion. All monitoring described above shall be conducted for periods of at least twenty minutes and the monitoring data sheets and the results, given in L<sub>90</sub> and L<sub>dn</sub>, shall be submitted to the Department, the Town of Mendon's Board of Selectmen and the Town of Mendon's Board of Health. If  $L_{90}$  or  $L_{dn}$  noise levels at the nearest residence significantly exceed the modeled noise levels presented in this petition, the Company shall coordinate with Board of Selectmen and Board of Health regarding this matter, and shall inform the Department of the elevated noise levels and of any actions it intends to take to address them.

In addition, the Department notes that the Company has unusually long, and potentially disruptive, construction hours. The Company was unwilling to commit to specified hours for construction. Although the record indicates that there are certain limited construction phases during which the Company will need to have workers onsite up to twenty-four hours a day, these phases should be of a limited duration. Therefore, in order to limit construction impact on the neighborhood, the Department requires Tennessee to restrict its hours of construction to 7 a.m. to 7 p.m. on weekdays, and 8 a.m. to 6 p.m. on Saturday, except during those limited phases when extended hours are necessary, such as start-up. The Department also instructs the Company to avoid construction on Sundays. If the Company needs to extend hours of construction for any reason, the Company is directed to notify the Town of Mendon and abutters at least 48 hours prior to the expected extended day of construction.

The record shows that the proposed compressor station site has significant buffers of vegetation in all directions except southeast. To the southeast, in the direction of the nearest residence, the record shows that there are trees sufficiently tall and dense to screen views of the facility and its stack. The Department notes that the minimal visual

impact expected to the nearby residential areas is dependant upon the maintenance of the existing stand of trees along the southeastern side of the site. Therefore, the Department requires the Company to maintain the buffer of trees to the southeast of the facility in order to screen the facility from residential properties.

The record indicates that the Company will need approval from the MDEP for air emissions associated with the proposed compressor station expansion. The record indicates that the proposed facility would burn natural gas and would meet state and federal standards for emission limits.<sup>(20)</sup>

With respect to other potential environmental impacts, the record shows that the construction of the proposed compressor station expansion would not affect any recreational or scenic area, archaeological area, historic resources or critical habitats or species. It would not affect local water supplies, or result in any alteration of wetlands. The Company has agreed to take steps to limit erosion and stormwater impacts during construction. Finally, construction of the proposed compressor station expansion would not increase safety concerns, as only limited additional quantities of hazardous chemicals would be stored at the proposed compressor station site.

The record shows that the construction of the proposed pressure regulation facility would alter land within a wetland buffer zone, but that the Company would take measures to minimize erosion and protect the wetlands during construction. The record demonstrates that the proposed pressure regulation facility would not have any air, water, noise, historic, traffic, land-use or safety impacts.

Based on the foregoing, the Department finds that construction of the proposed projects on the proposed site would serve the public interest, and that such interest outweighs the minimal environmental impacts, consisting primarily of noise and air emissions of the compressor station. The Department therefore finds that the proposed project is reasonably necessary for the public convenience or welfare.

#### D. Conclusion

As set forth in Section III.A above, Tennessee has established that it is a public service corporation. As set forth in Section III.B, Tennessee also has established that it requires an exemption from Sections 1, 2, and 4 of the Mendon bylaws and that it may require exemption from Sections 3, 5, and 8 of the Mendon bylaws in order to construct both proposed projects. As set forth in Section III.C, Tennessee has established that both proposed projects are reasonably necessary for the public convenience or welfare, if it maintains the existing vegetation buffer to the southeast of the proposed compressor station site, provides ambient and operational noise monitoring that is submitted to the Town and restricts its hours of construction.

#### V. ORDER

Accordingly, after due notice, hearing and consideration, it is hereby

ORDERED: That Tennessee Gas Pipeline Company Gas Pipeline Company's petition for the construction of the proposed compressor station expansion and proposed pressure regulation facility and appurtenances, as described in the Company's exhibits on file with the Department, for an exemption from Sections 1 through 5 and 8 of the Mendon Zoning Ordinance be allowed, pursuant to G.L. c. 40A §3; and it is

FURTHER ORDERED: That Tennessee Gas Pipeline Company shall implement all mitigation measures proposed by the Company in this proceeding; and it is

FURTHER ORDERED: That Tennessee Gas Pipeline Company shall maintain the vegetative buffer along the southeastern portion of the site in order to reduce visual impacts on residences; and it is

FURTHER ORDERED: That Tennessee Gas Pipeline Company shall conduct measurements to establish a "baseline" ambient noise level and to provide periodic monitoring of future noise levels at the southeast property line and at the nearest residence under summer and winter conditions. To establish baseline ambient noise levels, the Company shall either (1) monitor noise levels without either the existing or the proposed compressor station in operation, or (2) monitor noise levels at locations similar to the southeast property line and the nearest residence, but not affected by the noise of the existing compressor station. The Company also shall monitor noise levels with both compressor stations in full operation during peak load conditions in summer and winter, in the first, third, fifth, and tenth year after the completion of the proposed compressor station expansion. All monitoring described above shall be conducted for periods of at least twenty minutes and the monitoring data sheets and the results, given in  $L_{90}$  and  $L_{dn}$ , shall be submitted to the Department, the Town of Mendon's Board of Selectmen and the Town of Mendon's Board of Health. If L<sub>90</sub> or L<sub>dn</sub> noise levels at the nearest residence significantly exceed the modeled noise levels presented in this petition, the Company shall coordinate with Board of Selectmen and Board of Health regarding this matter, and shall inform the Department of the elevated noise levels and of any actions it intends to take to address them; and it is

FURTHER ORDERED: That Tennessee Gas Pipeline Company shall restrict its hours of construction to 7 a.m. to 7 p.m. on weekdays, and 8 a.m. to 6 p.m. on Saturdays, except during those limited phases when extended hours are necessary, such as start-up. The Department also instructs the Company to avoid construction on Sundays. If the Company needs to extend hours of construction for any reason, the Company is directed to notify the Town of Mendon and abutters at least 48 hours prior to the expected extended day of construction; and it is

FURTHER ORDERED: That Tennessee Gas Pipeline Company notify the Department of any significant changes in the planned timing, design, or environmental impacts of the proposed project as described above; and it is

FURTHER ORDERED: That Tennessee Gas Pipeline Company shall obtain all other governmental approvals necessary for this project before construction commences; and it is FURTHER ORDERED: That the Secretary of the Department shall transmit a certified copy of this Order to the Clerk of the Town of Mendon; and that Tennessee Gas Pipeline Company shall serve a copy of this order on the Mendon Board of Selectmen; the Mendon Planning Board, the Mendon Board of Health, and the Mendon Zoning Board of Appeals within five business days of its issuance and shall certify to the Secretary of the Department within ten business days of its issuance that such service has been accomplished.

By order of the Department,	
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James Connelly, Chairman	
W. Robert Keating, Commissioner	
Eugene J. Sullivan, Jr., Commissioner	_

## Paul B. Vasington, Commissioner

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).

- 1. The Department will refer to the two projects collectively as "both proposed projects."
- 2. The Company indicated that it would also construct a 12' by 10' covered walkway at the proposed site (Exh. HO-G-4S).
- 3. The Company would construct the proposed compressor station expansion within a 3.32 acre fenced in area on the site (Exhs. RR-DTE-5; TM-1B).
- 4. The Company explained that it received a zoning exemption in 1992 to construct the original compressor station facility in Tennessee Gas Pipeline Company, D.P.U. 91-247 (1992) (Exh. HO-G-5).

- 5. In addition, the Massachusetts Environmental Policy Act provides that "[a]ny determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." See G.L. c. 30, § 61. Pursuant to 301 C.M.R. § 11.01(3), these findings are necessary when an Environmental Impact Report is submitted by a company to the Executive Office of Environmental Affairs, and should be based on such Environmental Impact Report. The Company stated that it was not required to file an Environmental Impact Report for the proposed projects (Exh. HO-G-1). Where an Environmental Impact Report is not required, these findings are not necessary 301 C.M.R. § 11.01 (3). Therefore, c. 30, § 61 findings are not necessary in this case.
- 6. The Mendon by-laws specify that an applicant may apply for a special permit or variance for a proposed use that does not comply with uses or standards in residential zones (Exh. TM-1D).
- 7. The Company's proposed uses are not among those specifically prohibited by Section 3. However, the Company testified that the prohibition of commercial dumps or facilities or uses thereto, could "in a stretch" apply to the proposed facilities because they are commercial (Tr.1, at 60). Section 3 also prohibits electric generating plants in Mendon (Exh. TM-1D at 9).
- 8. Tennessee indicated that it currently has 90,000 Dth/d of additional capacity subscriptions from American National Power, Inc. and El Paso Gas Services Company (Exhs. TM-1A at 5-6; Men-6). The Company indicated that it chose a compressor unit that provides more capacity than that covered by the subscriptions, because (1) other compressor units would not meet the emission limits of the Massachusetts Department of Environmental Protection; (2) the cost increase per unit horsepower is not substantial; and (3) the natural gas market is growing and excess capacity will enable the Company to provide additional volumes to the Algonquin and Maritimes and Northeast pipelines (Exh. TM-1A (Att. Z)).
- 9. Tennessee estimated that it would need 29,500 gallons of hydrostatic water to test the proposed compressor station expansion and 3,300 gallons of hydrostatic water to test the proposed pressure regulation facility (Exh. TM-1AE, Table 2.2-1).
- 10. The Company presented maps of the proposed sites that showed delineated wetlands near both facilities, including a portion of the Mill River and associated riverfront area, bordering vegetated wetland, floodplain, and buffer zone (Exhs. TM-1AE at 3-9; TM-1B; HO-WL-1). The Company indicated that these areas were delineated as defined by the Massachusetts' Department of Environmental Protection and Army Corps of Engineer's guidelines (Exhs. HO-WL; TM-1AE at 3-9).
- 11. Tennessee asserted that it could not make an estimate of how often it expected to run the proposed compressor station expansion, or the seasonal or diurnal operational changes that would be expected at the proposed compressor station expansion, because

- the new facility will be primarily supplying generating facilities as opposed to local distribution companies (Exh. PN-2-S; Tr. 1, at 19-21). The Company stated that the existing units run more in the winter and are not run continuously (Tr. 1, at 19-20).
- 12. The Company estimated the actual potential emissions from the proposed compressor station expansion to be: 24.86 tons per year ("tpy") of NO<sub>X</sub>, 30.27 tpy of CO, 8.67 tpy of VOCs, 4.09 tpy of PM-10, and .16 tpy of SO<sub>2</sub> (Exh. HO-A-1S (Att.) at Table 3-2).
- 13. The Company further stated that the existing facility is considered a minor emission source, and that potential emissions from the proposed compressor station expansion alone would be less than federal major source threshold emission levels (Exhs. HO-A-2; TM-1AE at 9-1, Table 3-2).
- 14. The L<sub>90</sub> noise is the level of noise that is exceeded 90 percent of the time during a measurement period (Exh. Men-14).
- 15. The L<sub>eq</sub> is the steady state reflection of sound that has time varying sound energy (decibel levels) during a measurement period (id.).
- 16. The Company was unable to explain the difference in noise levels from the two surveys, but did test to make sure that the noise from the compressors had not changed (Exhs. TM-2, at 9-7; HO-N-7). The Company submitted a summary of the noise monitoring conducted on both dates, and the data does not demonstrate that the Company conducted measurements at the nearest residence (Exhs. HO-N-6S; HO-N-6S-R; Men-3).
- 17. The L<sub>dn</sub> is the average noise level over a day/night period, with a ten decibel increase in noise calculated for nine nighttime hours to account for greater sensitivity to noise impacts during sleeping hours (Exh. Men-14).
- 18. The Department recognizes that the size of the compressor station is larger than currently needed, but that FERC has approved the larger capacity. The Department notes that our finding in this instance should not be construed to limit the Department's review of need in future cases (G.L. c. 40A, § 3).
- 19. The Department notes that in Tennessee Gas Pipeline Company, D.P.U. 91-247 (1992), in which the Department granted the original facility exemption from the operation of the zoning bylaws, the Company was ordered prior to the commencement of construction of the facility to "measure the ambient noise levels at the perimeter of the site during the anticipated peak use period of the facilities, and thereafter Tennessee shall annually measure the ambient noise levels at the perimeter of the site during the actual peak use period of the facilities" Id. at 16. The Department has no record of receiving such measurements, and the Company indicated that it only conducted measurements in 1992 and 1999. The Department notes that a series of such measurements might have allowed it to resolve the apparent conflict between the 1992 and 1999 measurements.

20. In its brief, the Mendon ZBA requests that the Department investigate the use of SCONOx to control emissions. SCONOx is an ammonia free  $NO_X$  control technology being developed for use in electric generating facilities as an alternative to current  $NO_X$  control technologies which use ammonia as a catalyst. The Department notes that the record does not indicate that Tennessee would use ammonia at the proposed compressor station, or that SCONOx is an appropriate  $NO_X$  control technology for compressor

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